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## New and little known *Nebria* (*Epinebriola*) from the eastern Nepal Himalayas (Coleoptera, Carabidae) \*

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**Abstract.** Data on taxonomy and geographical distribution of some species of *Nebria*, subgenus *Epinebriola* Daniel, from eastern Nepal are given. Two species are described as new: *N. schawalleri* n. sp. and *N. tangjelaensis* n. sp.

**Key words.** Coleoptera, Carabidae, *Nebria*, taxonomy, new species, Nepal.

### Introduction

The northeastern part of Nepal along the border to Sikkim in the east and to Tibet in the north was hitherto quite poorly investigated under entomological aspects because of difficult accessibility. I was able to study interesting material of Carabidae from that region between the Tamur and Arun river systems collected by J. Martens and W. Schawaller during their expeditions in Nepal in 1983 and 1988 (map see fig. 11).

The species of *Nebria* were collected in high altitudes up to 5000 m near snow cover and all belong to a single subgenus, *Epinebriola* Daniel. Representatives of that subgenus are restricted in distribution to the Hindukush and Himalayas mountain systems and are divided in some species groups. The eastern branch of this subgenus includes most derived species: *rasa* Andrewes and *schawalleri* n. sp., both possess a surplus setation on the pronotum, a bisetose penultimate labial palpomere and weakly impressed elytral striae disappearing laterally. Without doubts these species are closely related to *orestias* Andrewes and cannot be separated from the subgenus *Epinebriola* in spite of the unique combination of the above mentioned features.

Other material of the genus *Nebria* from different Himalayan localities was treated earlier by Andrewes (1929, 1932, 1936) and Ledoux (1984, 1985). The descriptions and measurements in the present paper are standardized as in Shilenkov (1982).

Abbreviations and material depository: HW, head width; HL, head length; PW, pronotum width; PL, pronotum length; PBW, pronotum base width; EW, elytra width; EL, elytra length; ISU, Irkutsk State University (collection Shilenkov); SMNS, Staatliches Museum für Naturkunde Stuttgart; ZFMK, Museum Alexander Koenig Bonn.

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### Descriptions

#### *Nebria (Epinebriola) schawalleri* n. sp.

**Holotype**, female: Nepal, Taplejung distr., ascent to Tangje La NW Walungchung Gola, 4400–4600 m, alpine steppe, 23.V. 1988 leg. Martens & Schawaller (SMNS).

**Description:** Size large, standardized body length female 10.8 mm. Pitch-black, shiny, appendages red-brown, femora and antennal scape infuscated.

Head (fig. 1) relatively large and wide, with shallow transverse impression behind prominent eyes. Labrum with anterior margin evidently prominent, bearing 6 setae. Clypeus convex, slightly sinuated apically, frontoclypeal suture strong and deep, frontal furrows short and flat, vertex distinctly wrinkled. Surplus setation of head capsule: 2 and 3 supraorbital pores asymmetrically, additional clypeal pore unilaterally and one pore (? artifact) at the middle of the frons. Antennae slender, extending in female almost to the middle of elytra, antennal scape elongate, with 1 seta, second antennomere with 1 seta ventroapically, third antennomere with 6 setae apically. Median tooth of mentum 2.5 times as short as epilobes, sharply bidentate with V-shaped notch. Ligula with fingerlike process bearing 2 long setae apically. Penultimate labial palpomere bisetose, submentum with transverse row of 11 setae.

Pronotum (fig. 1) subcordate, basal sinuation of lateral margin moderately long and deep; basal angles short, acute, narrowly rounded apically, projected posteriorly; apical angles widely rounded, weakly prominent anteriorly; basal margin strongly bisinuate, with additional small notches just before basal angles; lateral explanation narrow, slightly broadened at middle; pronotum disc convex, with faint radial wrinkles and a pair of small pitlike impressions, basal foveae deep and narrow, basal and apical areas with sparse but rather strong punctuation, transverse and longitudinal impressions strong and deep, anterior transverse impression strongly sinuated basally and deeply impressed; basolateral seta present (at the left basal angle 2 setae), series of 5–6 midlateral setae sinuated in the apical half of pronotum. Proepisternum sparsely and weakly punctate; prosternal process elongate, rounded apically, unmarginated.

Elytra moderately convex, subovoid, elongate, narrowed basally; humeral sinuation very shallow, subapical sinuation absent; basal margination straight, merged smoothly with lateral margination, humeral carina absent or very slightly developed; apical angles rather sharp, rounded apically; subapical carina evanescent; striae shallow, with traces of punctuation; obliterate at the margins of elytra, stria 8 invisible; scutellar stria long, scutellar seta present; intervals scarcely convex, third interval with 4–6 very small discal setae adjoining stria 3. Metepisterna 1.5 times as long as wide, sparsely and faintly punctate. Hind coxa with 2 (or 1 unilaterally) basal seta(e) and 1 apical seta. Hindwings vestigial, without traces of venation.

Third to fifth visible abdominal sterna each with 3 pairs of posterior paramedial setae and with rather deep oblique impression laterally; anal sternite of female with 6 setae on hind margin.

Legs long and slender, metatarsomere 4 with long ventrolateral lobe.

Microsculpture on head and pronotum isodiametric, consists of very small sculpticells; on elytra strongly reduced, consists of very small and transverse meshes.

Apical gonocoxite of female long and slender (fig. 9), bearing 3 lateral setae on inner margin.

Proportions: PW/HW=1.29; PW/PBW=1.48; EW/PW=1.61; PW/PL=1.36; EL/EW=1.56.

Length 12.5 mm, width 4.7 mm.

**Diagnosis:** The form of the pronotum and the setation are unique and separate this species from all representatives of the subgenus *Epinebriola*.

**Geographical distribution:** Known only from the type locality in the eastern part of the Nepal Himalayas.

**Derivatio nominis:** With great pleasure I name this species in honour of my colleague Dr. Wolfgang Schawaller from the Staatliches Museum für Naturkunde in Stuttgart, who collected this species together with J. Martens and who provided me with this very interesting material.

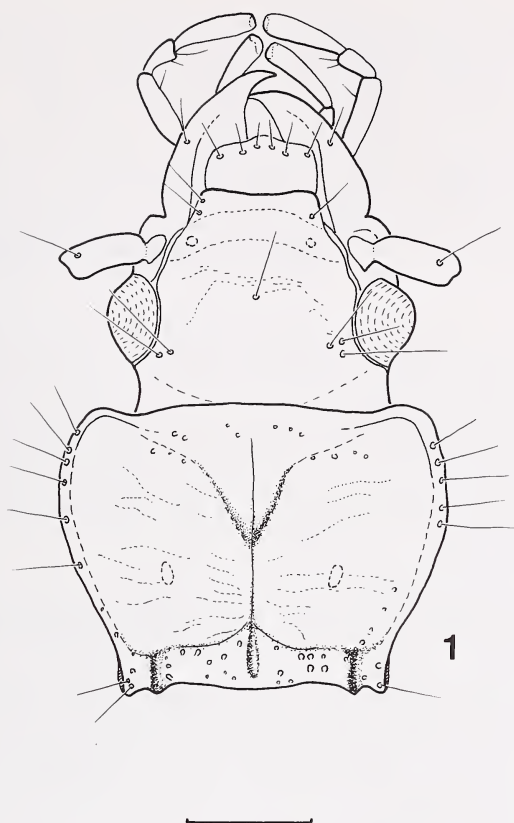


Fig. 1: *Nebria schawalleri* n. sp., head and pronotum, scale 1 mm.

***Nebria (Epinebriola) rasa* Andrewes, 1936**

Material: Nepal, Sankhua Sabha distr., from Thudam to Gabri Khola, 4000–4250 m, dwarf *Rhododendron*, 27. V. 1988 leg. Martens & Schawaller, 4 males, 3 females. Nepal, Sankhua Sabha distr., Kangla Khola E Thudam, 4100–4200 m, dwarf *Rhododendron*, rock debris, 24.–25. V. 1988 leg. Martens & Schawaller, 10 males, 1 female (ISU, SMNS, ZFMK).

This species was described from Sikkim (Ratong Chu) on a single female collected in an elevation of 11 000 feet. The taxonomical status was unclear, Andrewes (1936) compared it with *barbata* Andrewes. The redescription is given below.

Size moderate, standardized body length male 9.42, female 10.2 mm.

Pitch-black, shiny, legs dark piceous with testaceous tarsi and tibiae (in some individuals tibia infuscated), antennae entirely red-brown, or antennal scape slightly infuscated.

Head with shallow transverse impression behind prominent eyes; labrum with anterior margin straight or faintly prominent, bearing 6 setae; apical margin of clypeus straight or scarcely concave; frontal furrows hardly discernible, vertex faintly wrinkled; only with 1 pair of supraorbital setae. Antennae long and slender, extending in female to the middle of elytra, in male longer; antennal scape almost straight, with faintly sinuated apical margin, slightly narrowed basally, bearing 1 seta, second antennomere with 1 or 2 seta(e), third antennomere



with 5–6 setae apically. Median tooth of mentum 2.0 times as short as epilobes, bidentate with shallower notch than in the previous species, denticles apically obtuse. Ligula with fingerlike process bearing 2 long setae apically. Penultimate labial palpomere bisetose, submentum with transverse row of 10–12 setae, interrupted medially.

Pronotum (fig. 2) convex, subcordate, basal sinuation of lateral margin very short and shallow, situated just before very small and acute basal angles, projected posteriorlaterally; apical angles widely rounded, weakly prominent anteriorly; basal margin bisinuate; lateral explanation narrow, slightly broadened basally; transverse and longitudinal impressions distinct but not so strong and deep as in the previous species; punctuation faint and sparse; basolateral seta present, series of 3–4 midlateral setae situated in the apical half of pronotum. Proepisternum sparsely and weakly punctate; prosternal process elongate, rounded apically, unmarginated.

Elytra in shape as in the previous species, but apical angles more rounded; striae and intervals with the same structure, scutellar seta absent, rarely present unilaterally; discal setae very small, 4–5 setae in third interval adjoining stria 3, 2–4 setae in fifth and 0–4 in seventh interval (in the original description only 6 setae in the third interval are mentioned). Metepisterna 1.5 times as long as wide, smooth. Hind coxae with 2 basal and 1 apical setae. Hindwings vestigial, without traces of venation, shorter than in the previous species.

Third to fifth visible abdominal sterna each with 2 or 3 pairs of posterior paramedial setae and with rather deep oblique impression laterally; anal sternite of male with 5–6, of female with 6 setae on hind margin.

Legs as in the previous species, in male 3 first tarsomeres of protibia weakly expanded and with pad of adhesive setae ventrally.

Microsculpture faintly impressed, on head isodiametric, consists of very small sculpticells, on pronotal disc slightly transverse, almost isodiametric, on elytra consists of very small transverse meshes.

Basal part of median lobe (fig. 6) wide, with strongly prominent triangle basal lobes, apex of median lobe long and slender. Apical gonocoxite of female shorter than in the previous species (fig. 8).

Proportions:  $PW/HW = 1.21-1.23$ ;  $PW/PBW = 1.46-1.54$ ;  $EW/PW = 1.60-1.70$ ;  $PW/PL = 1.17-1.34$ ;  $EL/EW = 1.52-1.64$ .

Length 11.0–11.9 mm, width 4.2–4.5 mm.

Diagnosis: Differs from *schawalleri* n. sp. by the form of the pronotum, by the setation on head and pronotum, by the structure of the female apical gonocoxite and by smaller size.

Geographical distribution: Eastern parts of the Himalayas in Nepal and Sikkim.

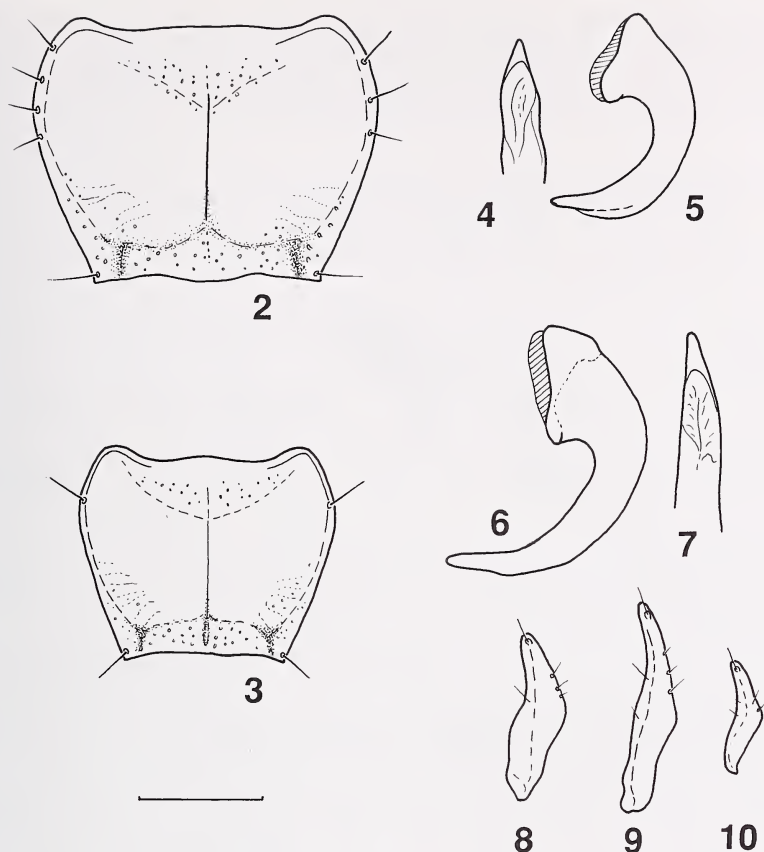
### *Nebria (Epinebriola) tangjelaensis* n. sp.

Holotype, male: Nepal, Taplejung distr., ascent to Tangje La NW Walungchung Gola, 4800–5000 m, alpine steppe, 23. V. 1988 leg. Martens & Schawaller (SMNS).

Paratypes: With the same labels, 5 males, 1 female (ISU, SMNS, ZFMK). Nepal, Taplejung distr., ascent to Tangje La NW Walungchung Gola, 4400–4600 m, alpine steppe, 23. V. 1988 leg. Martens & Schawaller, 1 male (SMNS).

Description: Size rather small, standardized body length male 7.74, female 8.10 mm. Dark piceous, shiny, mouthparts, antennae and legs red-brown, rarely femora infuscated.

Head with shallow transverse impression behind prominent eyes; labrum with anterior margin straight; apical margin of clypeus straight or scarcely concave; frontal furrows hardly discernible or evanescent, vertex smooth; only 1 pair of supraorbital setae. Antennae long and slender, almost extending to the middle of elytra, antennal scape almost straight, with faintly sinuated apical margin, moderately narrowed basally, bearing 1 seta, second antennomere with 1 seta lateroapically, third antennomere with 5–6 setae apically. Ligula with fingerlike process bearing 2 long setae apically. Penultimate labial palpomere trisetose, submentum with transverse row of 11–12 setae, interrupted medially.



Figs 2–10: 2, *Nebria rasa* Andrewes, pronotum; 3, *Nebria tangjelaensis* n. sp., pronotum, scale 1 mm; 4, *Nebria tangjelaensis* n. sp., median lobe from dorsal; 5, *Nebria tangjelaensis* n. sp., median lobe from left lateral; 6, *Nebria rasa*, median lobe from left lateral; 7, *Nebria rasa*, median lobe from dorsal; 8, *Nebria rasa*, left apical gonocoxite from ventral; 9, *Nebria schawalleri* n. sp., left apical gonocoxite from ventral; 10, *Nebria tangjelaensis* n. sp., left apical gonocoxite from ventral.

Pronotum (fig. 3) moderately convex, subcordate, uniformly narrowed basally, lateral margins in basal half almost straight, without basal sinuation, or with long and very shallow basal sinuation, basal angles obtuse with small and apical denticles, projected posterior-laterally; apical angles widely rounded, weakly prominent anteriorly; basal margin moderately bisinuate; lateral explanation very narrow, slightly broadened basally; transverse impressions rather strong, longitudinal impression shallow but distinct, punctuation faint and sparse; basolateral seta present, midlateral seta situated in the apical quarter of pronotum. Proepisternum almost smooth, with sparse and weak punctures; prosternal process elongate, rounded apically, unmarginated.

Elytra moderately convex, in some individuals longitudinally depressed along suture, subovoid, elongate, faintly narrowed basally; humeral sinuation long and very shallow, subapical sinuation almost evanescent; basal margination straight, merged smoothly with lateral

margination, humeral carina absent or very slightly developed; apical angles narrowly rounded; subapical carina short and hardly flattened; striae moderately impressed, distinctly punctate on disc, obliterate at margins and apex of elytra; scutellar stria long, scutellar seta absent; intervals on disc rather convex, flattened laterally and apically; discal setae absent.

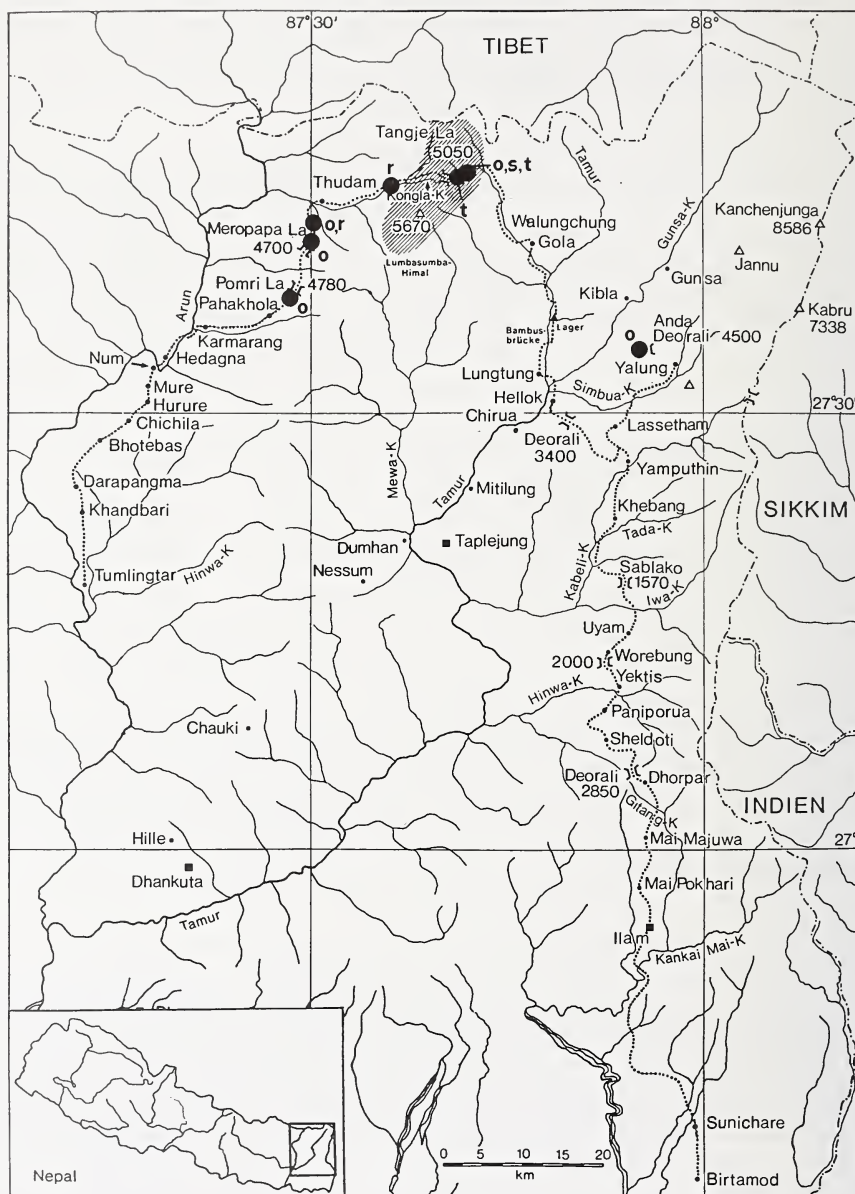


Fig. 11: Map of localities in eastern Nepal. o. *orestias*, r. *rasa*, s. *schawalleri* n. sp., t. *tangjelaensis* n. sp.

Metepisterna 1.5 times as long as wide, longitudinally depressed, almost smooth. Hind coxae with 1 basal seta and 1 apical seta, their apical part evidently punctate. Hindwings vestigial, without traces of venation.

Third to fifth visible abdominal sterna each with 3 or 4 pairs of posterior paramedial setae and with rather deep oblique impression laterally; anal sternite of male with 4, of female with 5–6 setae on hind margin.

Legs long and slender, in male 3 first tarsomeres of protibia weakly expanded and with pad of adhesive setae ventrally, metatarsomere 4 with rather long ventrolateral lobe.

Microsculpture faintly impressed, on head isodiametric, consists of very small sculpticells, on pronotal disc slightly transverse, almost isodiametric, on elytra consists of very small transverse meshes.

Median lobe (fig. 5) strongly curved, rather stout, with apex short and acute. Apical gonocoxite of female smaller than in the previous species (fig. 10).

Proportions: PW/HW = 1.10–1.21; PW/PBW = 1.52–1.59; EW/PW = 1.57–1.72; PW/PL = 1.19–1.35; EL/EW = 1.56–1.65.

Length 8.9–9.2 mm, width 3.3–3.4 mm.

**Diagnosis:** Closely related to *orestias* Andrewes, 1932, but smaller, body paler, pronotum different, especially in the form of basal angles, median lobe of male smaller with shorter apex.

**Geographical distribution:** Known only from the type locality in the eastern Nepal Himalayas.

**Derivatio nominis:** This species is named after the pass Tangje La, the type locality.

### *Nebria (Epinebriola) orestias* Andrewes, 1932

**Material:** Nepal, Taplejung distr., ascent to Tangje La NW Walungchung Gola, 4400–4600 m, alpine steppe, 23. V. 1988 leg. Martens & Schawaller, 11 specimens. Nepal, Taplejung distr., Anda Deorali between Simbua and Gunsu Khola, 4250–4500 m, alpine zone, 9. IX. 1983 leg. Martens & Daams, 3 specimens. Nepal, Sankhua Sabha distr., from Thudam to Gabri Khola, 4000–4250 m, dwarf *Rhododendron*, 27. V. 1988 leg. Martens & Schawaller, 2 specimens. Nepal, Sankhua Sabha distr., ascent to Meropapa La from Gabri Khola S Thudam, 4300–4600 m, meadows with dwarf *Rhododendron*, 26. V. 1988 leg. Martens & Schawaller, 8 specimens. Nepal, Sankhua Sabha distr., descent from Pomri La, S slope, 4550–4450 m, under snow covered stones, 29. V. 1988 leg. Martens & Schawaller, 1 specimen (ISU, SMNS, ZFMK).

The species was described by Andrewes (1932) from “Sikkim-Tibet, Jelep Pass”. The taxonomical status of this species was unclear. Recently, Ledoux (1985) included the species in his subgenus *Himalayonebria*, briefly characterized in the determination key and by figures of the pronotum and male genitalia.

**Geographical distribution:** In the eastern Himalayas in Nepal and Sikkim and probably in the adjacent territory of Tibet.

### Acknowledgements

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### Zusammenfassung

Daten zur Taxonomie und geografischen Verbreitung einiger *Nebria*-Arten, Untergattung *Epinebriola* Daniel, aus Ost-Nepal werden mitgeteilt. Zwei Arten werden neu beschrieben: *N. schawalleri* n. sp. und *N. tangjelaensis* n. sp.



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